

Examining the Social and Economic Impact of Climate Change on Rural Communities and the Role of Global Governance in Addressing These Challenges

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Abstract

This study examines the impacts of climate change on rural communities, specifically in the areas of agriculture, forestry, fisheries, and natural resources. The study highlights the challenges faced by these communities in terms of social welfare, economic growth, infrastructure development, and environmental sustainability. Global governance is also mentioned as an important factor in addressing climate change challenges. The study finds that rural populations heavily depend on these sectors, making them vulnerable to extreme weather events such as increasing temperatures, storms, floods, and droughts. This vulnerability leads to various social and economic challenges, including crop failures, harm to livestock, and infrastructure damage.

Keywords: *Climate change, rural communities, social impact, economic impact, global governance*

Introduction

Climate change is an escalating worldwide occurrence that is impacting diverse physical, biological, and social systems (Intergovernmental Panel on Climate Change [IPCC], 2018). Rural communities, in particular, are exceptionally susceptible to the social and financial hazards caused by climate change. These communities rely primarily on agriculture, forestry, fisheries, and natural resources, and are exposed to the detrimental consequences of increasing temperatures, storms, floods, droughts, and other severe weather conditions (United Nations Development Programme [UNDP], 2019). Consequently, rural communities face significant obstacles concerning social welfare, economic progress, infrastructure development, and environmental sustainability (Organization for Economic Cooperation and Development [OECD], 2016).

One of the most pressing challenges that people are facing nowadays is climate change. The current concentrations of greenhouse gases in the atmosphere indicate that there is already a significant level of warming worldwide (World Bank, 2011). Various scientific sources reveal an increasing amount of evidence that the emission of greenhouse gases has led to quick and drastic climate change, which poses substantial challenges to social, economic, and ecological systems globally (Karl et al., 2009). Furthermore, IPCC's publication in 2012 confirmed that numerous segments, ecosystems, and places are highly susceptible to climate, causing climate change to compound such vulnerabilities (IPCC, 2012).

Climate change has an uneven spatial distribution at various geopolitical scales. The World Bank (2013) asserts that the effects of climate change disproportionately affect the tropics and the impoverished. Additionally, the United Nations Population Fund (UNFPA, 2012) postulates that the impacts of climate change are not uniform across nations and geographic regions and that developing countries are more vulnerable due to their dependence on climate-sensitive sectors like agriculture and fisheries, low GDP, high poverty levels, low education levels, limited human resources, institutional, economic, technical, and financial capabilities (IPCC, 2007). There is a general agreement among scholars that low-income individuals bear the brunt of the shifting weather and climate, making them less able to adapt adequately to the consequences of climate change (World Bank, 2012).

According to several sources, the impact of climate change on countries and societies is not solely determined by the magnitude of climatic stress, but also by the sensitivity and capacity of affected individuals to cope with such stress (Care, 2011; European Environment Agency, 2012; Madu, 2012). As a result, developing countries and least developed countries are among the most severely affected by climate change due to their greater social and economic vulnerability to its effects (World Bank, 2010). Within these countries, rural residents are particularly vulnerable to the local conditions that exacerbate the impact of climate change. Geographic factors, such as remote location and a lack of socioeconomic infrastructure, make it difficult for rural communities to pursue socioeconomic activities and further heighten their vulnerability to climate change (Ranger & Garbett-Shiels, 2012).

According to Rishi, Omprakash and Mudaliar (2010), due to the observable pattern of climate impact, it is crucial to tackle climate change adaptation, vulnerability, and coping issues,

especially in developing countries which show the most significant shortcomings in their ability to adapt. As such, a significant challenge for the research community is to provide policymakers with relevant information about vulnerability, impacts, and adaptation (VIA) within the framework of a changing climate coherently and in a coordinated manner (United Nations Environment Programme, 2013). There is an argument that despite the increasing knowledge about climate change and its impacts, more needs to be comprehended about the connections between climate change and rural development (Unique Forestry and Land Use, 2013).

Understanding the impact of characteristics present in rural areas on climate change vulnerability is critical. The assessment helps to comprehend the degree of risk that the changing climate poses to rural regions and provide information for devising strategies to adapt to the impact of climate change. By identifying the most susceptible rural areas to climate change, rural development practitioners and decision-makers can use targeted measures to tackle the problem of climate change. Planning for and adapting to climate change is crucial as it provides an opportunity to exploit the benefits and mitigate risks (USAID, 2007).

Climate change disasters have become more frequent and serious worldwide, posing a great danger to humankind and their means of subsistence (Mugambiwa & Tirivangasi, 2017; Mugambiwa, 2018; Tirivangasi, 2018). Climate change has negative effects on agriculture, leads to water resource depletion, and impairs food security (Chikosi et al., 2018). The agricultural output in Africa has been adversely affected by climate change, which results from a combination of natural climate changes and human activities (Mugambiwa & Tirivangasi, 2017; Ziervogel et al., 2006). Developing countries, including Africa, face greater challenges from climate change due to a lack of adequate adaptation measures (Enete & Achike, 2008; Jagtap, 2007; Nwafor, 2007). The rural communities in Zimbabwe are among those negatively affected by climate change, with unreliable rainfall patterns causing nationwide flash floods and droughts, resulting in lower agricultural output and increased risk for farming communities (Chikosi et al., 2018).

Ndebele and Mubaya (2015) argue that climate change intensification results in increased variability in maize yield, making maize farming a more uncertain endeavor. The authors explain that the Bikita and Zaka districts of Masvingo Province are experiencing more frequent dry spells and erratic rainfall patterns, leading to inadequate support for crop production. Matarira et al. (2004) suggest that climate change poses a high risk of Masvingo Province becoming a non-maize producing area. To enhance food security in the community, farmers must be encouraged to grow more drought-resilient crops like sorghum and millet, which have not received adequate government funding and have not been prioritized despite their viability in mitigating the effects of climate change (Chazovachii et al., 2012). Manyeruke et al. (2013) criticize the government's poor strategic planning, manifested through the distribution of maize seeds rather than promoting small-grain crop cultivation in drought-prone regions.

The politics of climate change is extensively discussed in various literature, such as research papers, books, blogs, and articles, as it is considered a crucial factor that influences existing and future responses to this global challenge (Betsill & Bulkeley, 2006; Birkmann, Garschagen, Kraas, & Quang, 2010; Bulkeley & Betsill, 2005; Kehew et al., 2013; Roberts, 2008, 2010; Tanner, Mitchell, Polack, & Guenther, 2009). This issue is commonly examined at a global level,

such as in the disputed negotiations of the United Nations Framework Convention on Climate Change (UNFCCC), or at a national level in high-income countries, like the conflict between the Obama Administration and the US Congress concerning climate change legislation, or in the global politics and economy of climate change involving global corporate actors (Gasper, Portocarrero, & St. Clair, 2013; Tanner & Allouche, 2011).

Although international development publications, including the United Nations Development Programme's (UNDP) Human Development Report and the World Bank's World Development Report, concentrate on global politics, market-based mechanisms, global response challenges, and the need for accountability on global levels, they disregard the political aspect of this issue for low and middle-income nations. Nonetheless, the governance of climate change in the urban context has received substantial attention, with literature typically emphasizing legal and institutional frameworks and decision-making mechanisms (Betsill & Bulkeley, 2006; Birkmann, Garschagen, Kraas, & Quang, 2010; Bulkeley & Betsill, 2005; Kehew et al., 2013; Roberts, 2008, 2010; Tanner, Mitchell, Polack, & Guenther, 2009) (Gasper, Portocarrero, & St. Clair, 2013; Tanner & Allouche, 2011).

There is inadequate exploration into the national and local politics of climate change adaptation in low- and middle-income countries and cities, with greater focus being placed on technical solutions to support adaptation (Lockwood, 2013). However, the increasing extent of climate adaptation finance and the realization of planning processes, including National Adaptation Plans, within some of these highly vulnerable countries will inevitably influence and be influenced by social and power relations, including relations between citizens and the state. Although Tanner and Allouche (2011, p. 1) indicate that there is still a prevalent assumption of linear policymaking and apolitical, techno-managerial solutions to the climate change challenge, an extensively researched literature on environmental issues and development (Adams, 2008; Blaikie & Brookfield, 1987; Bryant & Bailey, 1997; Forsyth, 2002; Keeley & Scoones, 2000) affirms that local interactions, both for protecting resources and adapting to adverse changes in environmental goods and services, are highly political. According to Leftwich (2008, p. 5), politics is explicitly essential for decision-making related to climate change: "If it is to survive and prosper, any human community - whether a family or a federation - must have a means for making binding collective decisions: that means is its politics." Unless vital decisions are made and implemented, climate change will not be addressed. Governments and civil society actors are actively involved in determining both the specifics of climate change policy and programs, as well as more broadly how societies might form binding agreements on what needs to be done that are acted upon. However, climate change policy does not occur in isolation.

Climate change is an environmental challenge that poses risks to social, economic, and environmental systems globally, with rural communities expected to be more affected than urban areas. Rural communities are defined as populations residing in rural areas or communities and are heavily reliant on natural resources such as soil, water, and forests. These resources are especially vulnerable to climate change, and their degradation can lower the resilience of rural communities, making them more susceptible to the adverse effects of climate change. The aim of this research is to investigate the social and economic impact of climate change on rural communities, the existing global governance structures in place to address these challenges, and

how these governance structures can enhance the adaptive capacity of rural communities (Sanz-Cañada, 2020).

Methodology

In this study, a literature review methodology was employed to explore the social and economic effects of climate change on rural communities, as well as the significance of global governance in addressing these issues. Relevant sources of literature were identified from academic journals, policy documents, reports and research studies. The literature was searched using specific keywords including climate change, rural communities, social impact, economic impact, and global governance.

Literature Review

Rurality: Duenckmann (2010) noted that the definition of "rural" is often contrasted with urban areas as being characterized by open spaces, either in a natural or cultivated state. However, there is no exact boundary between the two, and thus there exists no universally accepted definition of rural areas. Consequently, data regarding rural areas and their socio-economic characteristics are not comparable or compatible. In the field of rural studies, defining what is meant by "rural" and distinguishing it from "urban" areas are major tasks that arise from the absence of a universally accepted definition of rurality (Madu, 2002).

Gilbert (1982) suggested that the term "rural" can be used to describe areas with a small population size and those engaged in agricultural production. However, this definition is a fuzzy descriptive designation or a convenient shorthand label. IFAD (2010) defined rural areas as areas of open country and small settlements; however, the policy-oriented and scholarly literature often take the terms "rural areas" for granted or leave it undefined. Therefore, distinguishing between rural and urban areas is problematic and elusive, as it goes beyond a simple description (Gilbert, 1982; IFAD, 2010).

The term "rurality" refers to the characteristics of rural areas, which are typically defined by small populations, low settlement density, and limited economic opportunities (Derudder, 2021). Rurality is an important aspect of rural development and is often used to describe the challenges and opportunities facing rural communities. Rurality can be viewed as an objective or subjective concept. Objectively, it is based on demographic and spatial factors such as low population density and limited access to services like healthcare and education. However, from a subjective perspective, rurality is more about the perceptions and experiences of residents, such as a connection to nature and a sense of community. Although rurality has traditional associations with the agricultural sector, the changing economy has led to the diversification of rural economies into service-oriented industries, including tourism, recreation, and natural resource extraction. The concept of rurality also affects social and cultural aspects of rural communities, which share unique traditions and ways of life compared to urban areas; however, with increasing globalization and connectivity, cultural differences are slowly becoming less distinct (Derudder, 2021).

According to Dasgupta and colleagues (2014), three primary factors contribute to the challenges in defining and distinguishing between rural and urban settlements. Firstly, settlements exist along a continuum from "rural" to "urban," which means that "large villages," "small towns," and

"small urban centers" do not fit neatly into either category. Consequently, it is difficult to determine whether borderline characteristics should be classified as rural or urban. Secondly, the character of settlements changes, including urban expansion and sprawl development, and rural transformation. Lastly, different countries employ different criteria, such as population (with varying cut-off points between nations) or the percentage of population employed in different industries, making it even more difficult to settle on a standard definition (Bernstein, 1992; Madu, 2002; Bogdanov, Nikolić, Dimitrievski, & Kotevska, 2015). Even official definitions based on statistical criteria or administrative decisions are frequently applied on different territorial units or subject to changes without clear criteria.

According to the Study Programme on European Spatial Planning (1999), the concept of rurality has been a topic of lengthy debate and controversy where it seems impossible to create an objective or clear definition of rurality due to the difficulties in defining rural. The issue lies in the fact that multiple definitions and methodologies exist regarding what constitutes "rural," which are culturally and historically determined and vary from region to region (Anriquez & Stamoulis, 2007). This leads to numerous and diverse debates on the concept of rural. One such debate is whether rural is a geographical concept with boundaries on a map or a social representation that involves a community of interest, culture, and way of life (Plessis et al., 2001). Despite these challenges, evidence indicates the existence of rural areas, and it is crucial for researchers interested in studying rural areas to gain a better understanding of the nature and scope of rurality to prepare for possible challenges they may encounter (Lewis, 1983).

According to Madu (2015), researchers should gain exposure to real-world conditions in rural areas and understand how they can impact planned research activities to enrich their views and perceptions of what constitutes rurality. Even though the idea of rurality is chaotic and unspecific, it is still an important concept in the way the world is perceived (Duenckmann, 2010). The term "rural" is widely used to refer to non-urban or peripheral regions without a clear definition or spatial implications. Rural areas have peculiar characteristics that have led to multiple perceptions and viewpoints, but there is no consensus on the definition of rural. However, most authors agree that understanding rural involves using ecological, occupational, or socio-cultural dimensions or a combination of these dimensions (Madu, 2002). In developing countries, rural areas are typically characterized by sparsely populated open country with a population supported by extensive land uses, and a relatively small population size is a key factor in distinguishing rurality (Wolfe & Fischer, 2003; Ghana Statistical Service, 2013).

According to OECD (2016), although agricultural activities have traditionally dominated rural areas, their decline and rural economic diversification have reduced their preeminence. It is important to note that rural is not synonymous with agriculture or economic stagnation. However, low socio-economic status among rural dwellers is a well-documented concern in rural studies. Limited physical infrastructure in rural areas has been highlighted as a major obstacle to socio-economic development programs (Arku & Arku, 2010).

Climate Change

Climate change is one of the most significant threats facing humanity today. It is the gradual increase in the Earth's surface temperature due to the trapping of gases within the Earth's

atmosphere. The reality is that climate change is not just a theoretical threat; it is a real and pressing issue that affects people all over the world.

The impacts of climate change are far-reaching, affecting natural ecosystems, biodiversity, as well as human life. These impacts result in various consequences such as increased sea levels, more frequent and severe weather conditions ranging from hurricanes to wildfires, and reduction in crop yield coupled with a surge in oceanic acidity. Countries in areas with low-lying coasts or those whose economies depend on agriculture face severe challenges as a result of these disruptions. Canada in the recent time, has suffered a huge setback due to the Wildfires have collectively burned more than 7.9 million hectares (19.5 million acres) of land so far this year. There are currently 483 wildfires across Canada. More than 250 of those are considered to be out of control. The wildfires have also produced record levels of carbon emissions, with smoke reaching as far as Europe. The previous Canadian record for area burned by wildfires was set in 1989 from more than 11,000 blazes, according to government figures. Wildfires can affect agriculture by damaging crops, orchards, livestock, farm facilities or affecting soil composition. It can directly impact agricultural production and yield. While irrigated crops can be viewed as a “buffer” during a wildfire, wind-driven wildfires can easily burn well-irrigated crops. The heat from wind-driven fires can burn into multiple outer rows of crops, causing singeing, and even killing crops. Heat radiating directly from flames can damage sprinklers, fences and other agricultural infrastructure. Crops that are harvested when at a low moisture content, such as wheat and other grasses can be especially susceptible to wildfires and many times fuel wildfires to a raging burn.

There are many factors contributing to climate change, but one of the most significant factors is human activity. Industrialization, burning fossil fuels, deforestation, and the use of industrial chemicals, such as refrigerants, are some of the primary human activities that cause climate change.

The scientific community has long warned that the Earth's temperature is rising due to human activity, and that we need to act quickly to prevent more significant harm. The 2015 Paris Agreement, a global agreement to reduce greenhouse gas emissions, was a critical step towards curbing climate change. It set an ambitious target to limit global temperature rise to below 2°C above pre-industrial levels, with a goal of limiting the increase to 1.5°C.

Many countries have taken significant steps to reduce their carbon emissions and meet the Paris Agreement's targets. The use of renewable energy, energy-efficient buildings and appliances and cleaner transportation options like electric cars are some of the solutions for reducing carbon emissions. However, there is still a long way to go, and much more needs to be done on a global scale to confront climate change. It is worthy to know that some developed countries are still emitting more hydrocarbons into the air, thereby attempting the defeat the 2015 Paris Agreement. In order not to allow the 2015 Paris Agreement to be a futile effort, Fossil Fuel Non-Proliferation (Treaty) was birthed. It is an initiative aimed to stop the expansion of fossil fuel exploitation, and manage a just transition away from coal, oil, natural gas into clean energy. Though there is a concern as to the possibility of achieving this gigantic project. This step is essential because, for 30 years, efforts have been made to reduce emissions, though fossil fuel industry has been in

continuous production and expansion. At Cop27 (Egypt) Tzeporah Berman, chair of the initiative said “We are trying to reduce the demand of fossil fuels without reducing the supply which is trying to cut with one half of the scissors where we don’t have a treaty on which each nation can produce and where without a treaty, we will be unable to bend the curve on emissions. Furthermore, there is a huge challenge towards actualization and compliance of the non-proliferation of fossil fuel project by these developed countries especially with USA, Russia, China and others. This is due to the huge storage of sufficient coal, oil, and gas in their reservoirs. Some countries reserves stand at 90% coal, 60% oil and gas which have not been extracted. In May, 2023, a Guardian investigation revealed that the world’s biggest fossil fuel firms were planning scores of Carbon bomb oil and gas projects. If this happens, it would be a Catastrophe with heavy global impacts. If we do not want to witness this looming doom, every country need to come together in order to sign this treaty and place strict penalty and sanctions for those who declines to do so. Over the past years, we have witnessed how international treaties signed by various countries were to a large extent, bore the desired fruit. Example is the nuclear Weapon arsenals treaty. Imagine how the world would have looked like if such treaty was not in place to checkmate its abuse.

In addition to government action, individuals also have a vital role to play. Small steps, such as reducing energy consumption at home, using public transportation, and eating a plant-based diet can make a difference in reducing carbon emissions.

It is essential to understand that climate change has wide-ranging consequences and requires urgent action. As a global community, we must work together to mitigate the impact of climate change and preserve our planet for future generations. Governments, businesses, and individuals must all do their part to reduce carbon emissions and transition to a more sustainable way of life.

In conclusion, climate change is a real and pressing issue facing humanity today. Its implications are profound and far-reaching, affecting ecosystems, biodiversity, and human life. It is the responsibility of every individual, every community, and every nation to take action to combat climate change and protect our planet. Only through collective action and a shared commitment can we hope to create a sustainable future for ourselves and generations to come.

Social Impact of Climate Change on Rural Communities:

In recent years, climate change has emerged as a significant concern globally, due mainly to its substantive social impact on various communities. The rural population is among the most affected, as it is entirely dependent on natural resources for its sustenance. Extreme weather conditions, such as floods, droughts, and landslides, coupled with rising global temperatures and depleting water resources, have fundamentally altered the rural life, resulting in social, economic, and health impacts (UNDP, 2020). The rural communities rely entirely on natural resources, such as forest products, fisheries, and pastureland, for their subsistence. However, climate change has led to decreased availability, water scarcity, and biodiversity loss, resulting in a direct impact on their livelihoods. Thus, fisheries-dependent communities experience instances of lower incomes due to depleted fish stocks, which also lead to food insecurity. Additionally, forest-dependent communities are also affected due to climate change, leading to deforestation, which causes

degradation of their livelihoods and the destruction of their social cultural heritage (UNDP, 2020).

The impact of climate change and weather conditions on various livelihoods, such as agriculture and fisheries, is often complex and context-dependent. Therefore, any framework aiming to assess the effects of climate change and weather shocks on households at a granular level must take into account the interdependent and often gradual changes in temperature and precipitation, the timing and length of rainfall seasons and the occurrence of extreme weather events. Accurately identifying and defining such changes is a crucial step towards comprehensively understanding their impact on livelihoods (Heltberg, Siegel, & Jorgensen, 2009).

Climate change has immense social impacts on rural communities, with food insecurity being one of the major consequences due to unpredictable weather conditions. Agricultural yields have decreased in some regions, leading to the loss of crops and displacement of communities, which has in turn contributed to rising poverty levels. Additionally, climate change has intensified droughts and floods, resulting in reduced water availability in many rural areas. This has adversely impacted crop production, livestock, and household use, leading to water scarcity. Rural households must travel long distances to find water, which increases the risk of waterborne diseases. Low adaptive capacity and susceptibility to the impacts of extreme climate events are mainly due to a range of factors that reflect the lack of human and physical capital, limited access to assets and services, weak institutional structures, lack of social protection programs, and significant exposure to uncertainty in the physical and economic environment (Skoufias et al., 2011).

Climate change has had adverse effects on the health of rural communities. The spread of malaria and other tropical diseases by mosquitoes and other vectors has increased due to higher temperatures, leading to a surge in health problems. Furthermore, the prevalence of negative health outcomes like respiratory diseases, skin diseases, and malnutrition has increased due to exposure to extreme weather conditions such as heatwaves, droughts, and floods. Climate change primarily causes the intensification of extreme weather conditions that impact the health of rural communities. Elderly people and vulnerable groups are particularly susceptible to heat stress and respiratory illness caused by extreme temperatures. Children's health is also compromised by food insecurity, leading to malnutrition and stunting. The absence of enough water resources due to water scarcity leads to the spread of waterborne diseases, resulting in increased morbidity and mortality rates in rural communities.

Aside from impacts on social conditions, climate change has also affected the economic status of rural communities. The effects of climate change, such as unpredictable weather patterns, have made traditional rural practices and occupations, including farming, fishing, and animal husbandry, unreliable and often unsustainable. This creates a need for adaptation, including the search for alternative means of obtaining food, which can cause socioeconomic declines for the village inhabitants. As a result, the agricultural productivity of the land and resources decreases, leading to emigration of rural people to urban areas, contributing to depleted rural communities. Climate change has drastically influenced agriculture in rural communities, resulting in low production rates and yields. Farmers now have to manage an environment characterized by unpredictable weather patterns such as extreme temperatures, flooding, droughts, and heatwaves,

leading to restricted growth of crops. Climate change also contributes to the spread of pests and diseases, leading to crop loss and contamination of crops. Decreased crop production results in food insecurity and reduced income for farmers, leading to poverty and malnutrition.

The impacts of climate change extend to the social fabric of rural communities, as traditional practices and beliefs that have persevered are now being jeopardized by an increase in migration, environmental pressure, and novel ways of life. These social changes in rural areas result in migration as individuals strive to locate alternative forms of income to sustain themselves. Farmers and pastoralists are compelled to relocate from their customary communal lands in search of better resources, creating conflict with host communities. Dispatch of land, food insecurity, and earning prospects due to climate change result in community displacement that contribute to amplified poverty and vulnerability.

Economic Impact of Climate Change on Rural Communities:

Rural communities face economic challenges due to climate change. Their dependence on agriculture, forestry, and fishing sectors makes them more vulnerable to climate-related impacts such as droughts, floods, and extreme weather events. These impacts can lead to significant economic losses, such as crop failure, livestock damage, and infrastructure impairment. Climate change also intensifies competition for natural resources and increases adaptation and mitigation costs. (Adapted from Waskow, L., & Beaudoin, A. (2019). *Climate Justice and Adaptation*. Oxford Research Encyclopedia of Climate Science.)

According to the International Food Policy Research Institute, climate change has the potential to adversely impact the agricultural industry. Changing climate conditions, such as increases in temperature and changes in precipitation patterns, can contribute to lower crop yields, reduced crop quality, and lower total crop output. As a result, farmers may experience reduced incomes, and food prices may rise for consumers as supplies of crops decline. In addition, extreme weather events associated with climate change, such as droughts and floods, can damage important agricultural infrastructure, including irrigation systems and roads, which can hinder farmers' ability to move goods to market. (Nelson et al., 2009)

The impact of climate change on the forestry industry is significant, and according to research by the USDA Forest Service, it can increase the risk of forest fires, cause tree mortality, and reduce the quantity of timber available for harvest. As a result, this can have significant economic impacts on the forestry sector. Additionally, forests play a key role in regulating water flow and preventing erosion. With changes in climate, these functions may be affected, potentially leading to downstream effects on communities. (Joyce et al., 2008)

Climate change can cause changes in the habitats and migration patterns of fish, which can have an impact on the livelihoods of small-scale fishers, according to Brander et al. (2014). Such changes due to climate change can negatively affect fish populations, and consequently, the fishing industry and communities that depend on it.

According to Hansen and Hellerstein (2016), rural areas are significantly impacted by climate change resulting in economic challenges that require the mitigation and adaptation strategy to safeguard their livelihoods. The authors further suggest that given the limited resources and

limited capacity of rural communities to respond to such challenges, governments and other stakeholders should support them in building resilience and advancing to sustainable economic models. Hence, it is necessary to acknowledge the potential adverse effects of climate change on rural communities and devise and implement effective policies and strategies to safeguard their economic well-being.

Global Governance:

As stated by Rashid, Ayaz, Mubeen, Rehman, and Chen (2021), climate change is among the primary difficulties that humanity confronts in contemporary times. The rise in greenhouse gases caused by activities like deforestation, and an increased dependency on fossil fuels contributed to a substantial increase in GHG. This has led to an increase in global temperatures that have impacted weather patterns, sea levels, and other factors. Therefore, global governance is essential in dealing with the critical challenges brought about by climate change.

One of the most significant global governance structures that play a crucial role in addressing climate change is the United Nations Framework Convention on Climate Change (UNFCCC). The UNFCCC is an international treaty that provides a framework for international cooperation to combat climate change. The objectives of the UNFCCC are to stabilize GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system and facilitate the adaptation to the impacts of climate change.

The UNFCCC has been successful in creating a platform for negotiations among nations to address climate change. The Conference of the Parties (COP) is the decision-making body of the UNFCCC and meets annually to discuss and negotiate climate change-related issues. The Paris Agreement, which was adopted at COP 21 in 2015, is an excellent example of the success of the UNFCCC. The Paris Agreement is an international agreement that aims to keep the global temperature rise well below 2 degrees Celsius above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5 degrees Celsius.

The UNFCCC is not the only global governance structure that plays a crucial role in addressing climate change. The Intergovernmental Panel on Climate Change (IPCC) is another essential global institution that provides scientific information to support climate change policy-making. The IPCC is a scientific body that is open to all member countries of the UN and provides scientific assessments of climate change and its impacts. The assessments of the IPCC form the basis of many international agreements, including the Paris Agreement. Another important global governance structure is the Green Climate Fund (GCF). The GCF is an international fund that is dedicated to helping developing countries reduce their GHG emissions and adapt to the impacts of climate change. The GCF is a vital part of the financial architecture that supports efforts to address climate change. It provides support to developing countries to implement their climate change commitments.

To sum up, the significance of global governance structures in confronting the difficulties posed by climate change cannot be underestimated. The UNFCCC, IPCC, and GCF are among the institutions, procedures, and regulations that comprise the global governance framework. Nonetheless, while these structures are indispensable, they are insufficient to contend with

climate change. The engagement of all nations, both developed and developing, in global endeavors to tackle climate change is imperative. The onus of addressing climate change falls on everyone, and we must collaborate to guarantee the creation of a sustainable planet for forthcoming generations.

The Role of Global Governance in Addressing the Social and Economic Impact of Climate Change on Rural Communities' Challenges.

Climate change has the potential to bring about considerable social and economic difficulties, particularly in rural areas. These difficulties incorporate an increase in ocean levels, dry seasons, flooding, high temperatures, and additional exceptional weather conditions that can negatively affect crop production, environmental supply, and natural resources. To address these issues, the worldwide governing body must play a significant part in reducing the social and financial effect of climate change on rural areas. This involves taking action on various components such as enhancing adaptation and mitigation measures, cultivating sustainable and climate-resistant practices, and supplying particular support to rural communities.

Firstly, global governance can work to strengthen adaptation and mitigation measures that promote climate resilience and help reduce the social and economic impacts of climate change on rural communities. These measures can include building infrastructure to adapt to the impacts of climate change, such as sea defenses and water storage systems, and investing in renewable energy and other low-carbon technology to reduce greenhouse gas emissions.

Secondly, global governance can promote sustainable and climate-resilient practices in rural communities. This could involve supporting sustainable land use practices, such as conservation agriculture and agro forestry, as well as improving water management and soil conservation practices to increase resilience to climate change.

Moreover, global governance can also provide targeted support to rural communities to help them cope with the social and economic impacts of climate change. This could include supporting access to markets, financing, and technical assistance, as well as providing social safety nets to vulnerable populations.

Additionally, Global governance can also help build the capacity of rural communities to cope with the social and economic impact of climate change by providing education and training on sustainable practices, and investing in research and development to identify viable adaptation and mitigation strategies.

Result:

The result of the study reveals that rural communities are highly vulnerable to the social and economic risks posed by climate change. Rural communities depend primarily on agriculture, forestry, fisheries, and natural resources, and are exposed to the adverse effects of rising temperatures, storms, floods, droughts, and other extreme weather conditions. As a result, rural communities face significant challenges related to social welfare, economic growth, infrastructure development, and environmental sustainability.

The study adopted a literature review approach to examine the social and economic impact of climate change on rural communities and the role of global governance in addressing these challenges. The literature sourced from various academic journals, reports, policy documents, and research studies reveals that climate change has become one of the primary concerns across the world in recent years, as it has a significant social impact on various communities.

The social impact of climate change on rural communities includes the dwindling water resources, extreme weather conditions like droughts, floods, and landslides, and increasing global temperatures altering their lifestyle, resulting in social, economic, and health impacts. The economic impact of climate change on rural communities includes crop failure, livestock loss, and damage to infrastructure. Rural communities are more susceptible to climate-related shocks such as droughts, floods, and extreme weather events.

The literature review also highlights that global governance plays a crucial role in addressing climate change. The increasing use of fossil fuels, deforestation, and other anthropogenic activities has led to a significant increase in the concentration of greenhouse gases (GHGs) in the atmosphere, which has resulted in a global temperature increase, leading to changes in weather patterns, sea level rise, and other impacts. The study notes that global governance structures such as the United Nations Framework Convention on Climate Change (UNFCCC), the Intergovernmental Panel on Climate Change (IPCC), and the Green Climate Fund (GCF) play a crucial role in addressing the challenges presented by climate change.

Discussion of Finding

The findings of this study highlight the negative impact of climate change on rural communities, which are highly vulnerable due to their heavy reliance on natural resources for livelihood. The study reveals that rural communities face significant social and economic challenges that affect their social welfare, economic growth, infrastructure development, and sustainability.

The social impact of climate change on rural communities is evident through the challenges posed by extreme weather conditions like droughts, floods, and landslides, which have significantly altered the rural lifestyle. The dwindling water resources have also had a severe impact on rural communities, causing adverse health and social impacts.

On the other hand, the economic impact of climate change on rural communities is significant, as they rely heavily on agriculture, forestry, and fishing, which are vulnerable to climate-related shocks such as droughts, floods, and extreme weather events. Consequently, the rural economic consequences can be serious including crop failure, livestock loss, and damage to infrastructure, among others.

In light of the negative impact of climate change on rural communities, the study highlights the need for global governance to address the challenges presented by climate change. The increasing uses of fossil fuels, deforestation, and other anthropogenic activities have led to a significant increase in greenhouse gases (GHGs) in the atmosphere. Therefore, global governance structures such as the United Nations Framework Convention on Climate Change (UNFCCC), the Intergovernmental Panel on Climate Change (IPCC), and the Green Climate Fund (GCF) play a crucial role in mitigating climate change effects.

In conclusion, this study underlines the need for global action to mitigate the negative effects climate change has on rural communities and highlights the importance of global governance in addressing climate change challenges.

Conclusion:

In conclusion, this study highlights the immense impact of climate change on rural communities, which are highly vulnerable due to their reliance on natural resources and primary economic activities like agriculture, forestry, and fishing. The study has revealed significant social and economic challenges facing rural communities due to climate change, including adverse social, economic, and health impact. It is essential to acknowledge the challenges facing rural communities due to climate change, and global governance should prioritize taking action on climate change to mitigate its negative effects. Further, there is a need for clear, unified definitions of rural communities to ensure data on their socio-economic characteristics are comparable and compatible, leading to more effective policy and action.

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